

IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF WISCONSIN
GREEN BAY DIVISION

UNITED STATES OF AMERICA and THE)
STATE OF WISCONSIN,)
Plaintiffs,)
v.)
NCR CORPORATION, APPLETON)
PAPERS INC., CITY OF APPLETON, CBC)
COATING, INC., GEORGIA-PACIFIC)
CONSUMER PRODUCTS LP, KIMBERLY-)
CLARK CORPORATION, MENASHA)
CORPORATION, NEENAH-MENASHA)
SEWERAGE COMMISSION, NEWPAGE)
WISCONSIN SYSTEMS, INC., P.H.)
GLATFELTER CO., U.S PAPER MILLS)
CORP. and WTM I COMPANY,)
Defendants.)

MENASHA CORPORATION,)
Counter-Claimant,)
v.)
UNITED STATES OF AMERICA and THE)
STATE OF WISCONSIN,)
Counter-Defendants.)
Case Action No.: 10-C-910
AMENDED AND SUPPLEMENTAL
DECLARATION OF PAUL F.
FUGLEVAND IN SUPPORT OF
MENASHA'S OPPOSITION TO THE
PROPOSED CONSENT DECREE FILED
ON OR ABOUT DECEMBER 1, 2010 AT
DKT. 31-1

I, Paul F. Fuglevand, declare as follows:

1. In 2008, Hunsucker Goodstein PC (“HG”), defense counsel for Menasha Corporation (“Menasha”), retained me to perform analysis related to the polychlorinated biphenyl (“PCB”) contamination in the Lower Fox River and Green Bay Superfund Site in Wisconsin (“LFR Site”). I was retained initially in connection with the *NCR Corp. v. George A. Whiting Paper Co.* litigation (Case No. 08-CV-00016-WCG, in the Eastern District of Wisconsin) (“Whiting Litigation”). My retention has been extended to include the *U.S. v. NCR Corp.* litigation (Case No. 10-910-WCG, in the Eastern District of Wisconsin) (“Enforcement Litigation”).

2. On December 1, 2010, the United States and the State of Wisconsin (the “Governments”) issued notice of a proposed settlement of the liability of Brown County, the City of Green Bay, and the “Settling Federal Agencies,” as defined in Dkt. 31-1 at 12, including the United States Army Corps of Engineers (“USACE”), in the Enforcement Litigation. I was asked by HG to conduct an evaluation of the existing historical and site data to evaluate whether the proposed settlement of the Settling Federal Agencies, particularly the USACE, is fair and represents a reasonable approximation of the USACE’s potential liability for the LFR Site.

3. In February 2011, I prepared a declaration setting forth my opinion that the proposed settlement between the Governments and the Settling Federal Agencies was not fair and did not represent a reasonable approximation of the USACE’s potential liability for the LFR Site. Dkt. 173-14 at 116-145. The opinion I provided was based on the then-available information. Since that time, I am aware that new information has been obtained relating to the USACE’s activities on the Lower Fox River (“LFR”), including additional documents and deposition testimony relating to the historical navigational dredging activities of the USACE on

the LFR. I was asked by HG to review this new information and re-evaluate whether the proposed settlement of the Settling Federal Agencies, particularly the USACE, is fair and represents a reasonable approximation of the USACE's potential liability for the LFR Site.

4. I am a principal in the environmental consulting and engineering firm of Dalton, Olmsted & Fuglevand ("DOF") located at 10827 NE 68th St, Suite B, Kirkland, Washington. I am one of the founding members of the firm, which has been in operation since 1989. DOF performs engineering services for environmental remediation projects throughout the United States, including environmental dredging.

5. For approximately thirteen (13) years, I was retained by the USACE as a nationwide instructor to the USACE on dredging fundamentals and dredging techniques and practices, including environmental dredging of contaminated sediment.

6. I have personal knowledge of the facts set forth herein, and if called upon as a witness I would testify competently to them.

EXPERT QUALIFICATIONS

7. I obtained my Bachelor of Science degree in Civil Engineering from Montana State University in Bozeman, Montana in 1976. In 1980, I obtained my Masters of Science in Civil Engineering (Geotechnical) from the University of California at Berkeley. I am a registered Professional Engineer, licensed in the states of Alaska, Oregon, Utah and Washington.

8. I have over twenty-nine years of experience in dredging and environmental remediation, including the assessment and management of dredged sediments. I have been involved with and worked on sediment remediation projects throughout my career. I have been project coordinator/project manager for projects involving several million cubic yards of contaminated sediment including the U.S. Navy Homeport in Everett, Washington, the Hylebos

Waterway in Tacoma, Washington, as well as being the chairman of the 2010 Hudson River Phase 1 Dredging Peer Review in New York.

9. During the past four years, I have not provided expert testimony in other cases.

10. I have been deposed and have been qualified as an expert witness in litigation cases on issues including the evaluation of the sources of contamination, the history of source releases, the extent of contamination, the cost of sediment remediation, and the allocation of sediment remediation costs. On November 1, 2012, I was deposed as an expert witness in this matter.

11. A list of my publications through February 2011 was contained in my resume included with my February 2011 declaration as Attachment A. Dkt. 173-14 at 135.

STANDARD TO WHICH MY OPINIONS ARE GIVEN

12. My opinions are given to a reasonable degree of scientific certainty. In addition, my opinions are based on my knowledge, skill, experience, training and education, on my review of pertinent documents, statutes, regulations and my professional experience.

13. Based on my review of the new additional information, pertinent documents, statutes, regulations and my professional experience, I prepared this Amended and Supplemental Declaration that details the conclusions of my investigation.

BASES OF MY OPINIONS

14. For purposes of this Amended and Supplemental Declaration, I reviewed documents and other information that have been gathered since the filing of the proposed settlement, and I reviewed my prior opinions. In this Amended and Supplemental Declaration, I provide an updated opinion regarding whether the proposed settlement between the Governments and the Settling Federal Agencies represents a reasonable and fair approximation of the liability

of the Settling Federal Agencies as it relates to the PCB contamination at the LFR Site.

15. The information I relied upon in forming my opinions contained in this Amended and Supplemental Declaration is of a type reasonably relied upon by experts in my field in forming opinions.

16. A complete list of the documents I relied on in forming my opinions in my February 2011 declaration was included with that declaration as Attachment B. Dkt. 173-14 at 143. A complete list of the new sources of information I relied on in forming my opinion is attached to this Amended and Supplemental Declaration as Attachment 1. This includes, but is not limited to, the following information:

- (a) the June 7, 2012 deposition of James Bonetti (“Bonetti Dep.”) (Tr. Exh. 6033);
- (b) the September 6, 2012 Fed. R. Civ. P. 30(b)(6) deposition of Dr. Joseph Gailani (“Gailani 30(b)(6) Dep.”) (Tr. Exh. 6146);
- (c) the September 6, 2012 deposition of Nicholas Brittnacher (“ Brittnacher Dep.”) (Tr. Exh. 6087);
- (d) the August 17, 2012 deposition of William Gildernick (“Gildernick Dep.”) (Tr. Exh. 6169);
- (e) the August 20, 2012 deposition of James Killian (“Killian Dep.”) (Tr. Exh. 6252);
- (f) the September 5, 2012 deposition of James Bumford (“Bumford Dep.”) (Tr. Exh. 6088);
- (g) the September 7, 2012 Fed. R. Civ. P. 30(b)(6) deposition of Jan Miller (“Miller 30(b)(6) Dep.”) (Tr. Exh. 6336);
- (h) the September 26, 2011 United States Answer to Counterclaims (“2011 U.S. Answer”) (Dkt. 224);

- (i) the June 18, 2012 United States Responses to Request for Admissions (“U.S. Response to RFA”) (Dkt. 512-2); and,
- (j) the September 17, 2012 Plaintiffs’ Brief in Opposition to Motion to Compel (Dkt. 518).

17. None of the sources of information listed on Attachment 1 as “Newly Referenced” was available at the time of my prior February 2011 declaration.

MY OPINIONS RELATED TO THE POTENTIAL LIABILITY OF THE SETTLING FEDERAL AGENCIES AT THE LFR SITE

LFR SITE BACKGROUND

18. The USACE has been conducting navigational dredging activities in the LFR for the past 150 years. 2011 U.S. Answer (Dkt. 224) ¶ 165. The USACE dredged over 16 million (16,000,000) cubic yards of sediments between the DePere Dam and Green Bay, including the harbor, between 1957 and 1998. Dkt. 698 ¶ 189; 2011 U.S. Answer (Dkt. 224) ¶ 247. In addition, the USACE conducted navigational dredging operations in Operable Units (“OUs”) 1, 2, 4, 5 and possibly OU3 at the LFR Site.

19. The sediments of the LFR are and were contaminated with PCBs. The dredging of sediments contaminated with PCBs in the LFR has and will result in the resuspension and redistribution of PCB-contaminated sediments in the environment at the LFR Site.

20. The United States has acknowledged that at least some of the sediments dredged in the LFR by the USACE between 1954 and the present contained PCBs. U.S. Response to RFA (Dkt. 512-2) at Response No. 222. Further, the United States has acknowledged that some sediments in and around the LFR that were dredged and disposed of in open water by the USACE between 1954 and the present were contaminated with PCBs. U.S. Response to RFA (Dkt. 512-2) at Response No. 224.

21. The navigational dredging activities by the USACE released hazardous substances into the environment. U.S. Response to RFA (Dkt. 512-2) at Response No. 226. PCB-contaminated sediments were transported between and among OUs (specifically OU4 to OU5), U.S. Response to RFA (Dkt. 512-2) at Response No. 227, and redistributed in the LFR and Green Bay, U.S. Response to RFA (Dkt. 512-2) at Response Nos. 228, 229.

22. Based on documents I have reviewed, the USACE disposed of approximately 4.5 million cubic yards of sediments dredged from the LFR and Green Bay, a significant portion of which likely was contaminated with PCBs, into various open water locations in the LFR and Green Bay. Tr. Exh. 547, Table 1 at 24-28 (EPAAR154929-33).

DREDGING CAUSES RESUSPENSION AND REDISTRIBUTION OF SEDIMENTS

23. It is generally accepted that some level of resuspension and redistribution of sediments occurs in river systems as a result of natural erosional forces such as river currents, wind generated waves, as well as a result of man-made activity such as the passage of ships and the resulting propeller-wash.

24. The United States acknowledges, however, that during dredging operations, including those in the LFR and Green Bay, resuspension of sediments into the water column occurred, potentially relocating them. Gailani 30(b)(6) Dep. (Tr. Exh. 6146) at 149:14-22; Plaintiffs' Brief in Opposition to Motion to Compel (Dkt. 518) at 5, citing Dkt. 512-3 at 2. The United States further acknowledges that each time the USACE dredged, it caused the resuspension and relocation of sediments in the LFR. U.S. Response to RFA (Dkt. 512-2) at Response No. 285; Gailani 30(b)(6) Dep. (Tr. Exh. 6146) at 149:22 & Exh. 4177 at 2 (BOLDT00665938).

25. Between 1958 and approximately 1980, the USACE utilized clamshell bucket

dredges to accomplish navigational dredging activities in the LFR. 2011 U.S. Answer (Dkt. 224) ¶¶ 182, 183. Dredged material escapes from an open-top clamshell bucket on its trip up from the bottom. U.S. Response to RFA (Dkt. 512-2) at Response No. 135; Gailani 30(b)(6) Dep. (Tr. Exh. 6146) at 68:21-69:23. Bucket dredging performed by the USACE on the LFR allowed dredged material to flow back into the LFR. U.S. Response to RFA (Dkt. 512-2) at Response No. 150; Gildernick Dep. (Tr. Exh. 6169) at 32:7-21; Brittnacher Dep. (Tr. Exh. 6087) at 27:14-28:11, 29:6-9, 32:3-9; Bumford Dep. (Tr. Exh. 6088) at 26:19-27:14, 90:4-20.

26. Bucket Dredging with a clamshell bucket distributes sediments throughout the water column. 2011 U.S. Answer (Dkt. 224) ¶ 177; U.S. Response to RFA (Dkt. 512-2) at Response No. 138; Gailani 30(b)(6) Dep. (Tr. Exh. 6146) at 68:21-69:23 & Exh. 4177 (Tr. Exh. 6460). The material released towards the top of the water column will typically travel further downstream than material released near the sediment bed. Gailani 30(b)(6) Dep. (Tr. Exh. 6146) at 81:17-83:13. The United States acknowledges that substantial losses of loose and fine materials occur even under ideal open-top clamshell bucket dredging conditions, except in the rare instances where a watertight bucket is used. U.S. Response to RFA (Dkt. 512-2) at Response No. 142; Gailani 30(b)(6) Dep. (Tr. Exh. 6146) at 69:8-19.

27. Resuspension during dredging is even higher if scow overflow is allowed to occur. U.S. Response to RFA (Dkt. 512-2) at Response No. 143; Gailani 30(b)(6) Dep. (Tr. Exh. 6146) at 110:7-11.

28. Because dredging physically excavates sediments to specified depths below the mudline (the sediment surface), dredging causes the resuspension and redistribution of sediments that may otherwise have remained covered and stationary.

29. The USACE engaged in the open water disposal of dredged materials, and

continued to engage in open water disposal of dredged materials for approximately two years after the U.S. Environmental Protection Agency (“EPA”) instituted a new policy in 1972 that “all discharges to the aquatic environment involving PCBs be restricted to the lowest possible level.” U.S. Response to RFA (Dkt. 512-2) at Response No. 262.

30. In 1977, Region 5 of the EPA determined that dredge sediments with PCB concentrations of 10 parts per million or lower were “not polluted” and were acceptable for open water disposal within Lake Michigan. 2011 U.S. Answer (Dkt. 224) ¶ 286.

31. Before 1989, the USACE allowed open water disposal of PCB-contaminated sediments with concentrations up to 10 parts per million in the Detroit District, which includes the LFR and Green Bay, on a case-by-case basis. Gailani 30(b)(6) Dep. (Tr. Exh. 6146) at 140:9-142:6 & Exh. 4225B (Tr. Exh. 7714) at B-14 (DOJ172788). This is ten times the 1 part per million cleanup standard for the LFR Site.

32. By January 1975, at the latest, sampling conducted on behalf of the USACE confirmed that the contaminants in at least some of the sediments in the LFR included PCBs. U.S. Response to RFA (Dkt. 512-2) at Response No. 308.

33. Sediments that were dredged in Green Bay were disposed of in open water locations in Green Bay. Miller 30(b)(6) Dep. (Tr. Exh. 6336) at 92:15-19 & Exh. 4141 (Tr. Exh. 6529) at M3-5 to M3-6. The USACE was aware that PCBs were present in the sediments at the LFR Site as early as 1975, if not earlier. Gailani 30(b)(6) Dep. (Tr. Exh. 6146) at 129:13-23 & Exh. 4225A (Tr. Exh. 7389) at MENENF000026, 27. Notwithstanding knowing of the existence of PCBs in the sediments at the LFR Site, the USACE did not alter the manner in which it conducted the navigational dredging activities. Bumford Dep. (Tr. Exh. 6088) at 37:18-22.

34. Between 1957 and 1973, the USACE engaged in the open water disposal of dredged sediments in OU4 of the LFR and Green Bay. Killian Dep. (Tr. Exh. 6252) at 99:25-101:14 & Exh. 4207f (Tr. Exh. 547), Table 1 at 24-29 (EPAAR154929--34). The open water disposal in Green Bay spread the dredged spoils over a fairly large area. Bumford Dep. (Tr. Exh. 6088) at 80:13-81:14. The USACE disposed of sediments that were dredged from certain parts of OU4 into other open water portions of OU4, including a disposal area used during the 1960s in the area of Dutchman's Creek. *Study of Alternative Disposal Areas for Green Bay Harbor, WI*, U.S. Army Engineer District Chicago, Corps of Engineers (Aug. 1968) (Tr. Exh. 6529) at Fig. M3-14 (DOJ315169) & Fig. M3-3 (DOJ315177); Miller 30(b)(6) Dep. (Tr. Exh. 6336) at 47:2-9, 49:14-50:18, 65:5-23 & Exh. 4226D (Tr. Exh. 6340), 155:16-156:25 & Exh. 4226F (Tr. Exh. 6342); Green Bay Harbor diagram (Dkt. 76-15) at 14 (noting disposal of dredge spoils in "Near Shore Disposal Area in Fox River Inner Channel @ ~ mi. 5"), 15 (same).

35. The navigational dredging activities by the USACE released hazardous substances into the environment. U.S. Response to RFA (Dkt. 512-2) at Response No. 226. The PCB-contaminated sediments were transported between and among OUs (specifically OU4 to OU5), U.S. Response to RFA (Dkt. 512-2) at Response No. 227, and redistributed in the LFR and GB, U.S. Response to RFA (Dkt. 512-2) at Response Nos. 228, 229.

NAVIGATIONAL DREDGING DOES NOT FOCUS
ON REMOVAL OF CONTAMINATED SEDIMENTS

36. While both navigational dredging and environmental dredging involve the removal of sediment from selected areas, they are performed for different purposes. In navigational dredging, the focus is to remove the selected sediment in the lowest-cost acceptable manner, with limited concern for resuspension and redistribution of disturbed sediment. In environmental dredging, the focus is on the removal of contaminated sediments, while also

paying particular attention to limiting resuspension and redistribution of contaminated sediments to limit recontamination or exacerbation of contamination in given areas.

37. The difference between navigational dredging and environmental dredging is exemplified by the Memorandum of Agreement entered into between the USACE and the EPA in April 2010 relating to the LFR Site. EPA, Interagency Agreement with U.S. Army Corps of Engineers for Response Action Work at the Lower Fox River and Green Bay Superfund Site, Wisconsin, April 2010 (Tr. Exh. 7316) (“April 2010 MOA”). In early 2010, pursuant to a January 29, 2010 letter from the USACE to the EPA, the USACE declined to perform additional navigational dredging activities in the LFR because of added requirements sought to be imposed by the EPA and the Wisconsin Department of Natural Resources (“WDNR”) to reduce the potential for resuspension and redistribution of PCB-contaminated sediments in the LFR, with the USACE claiming these requirements were too onerous. USACE, *Correspondence to U.S. Environmental Protection Agency, Thomas R. Short*, January 29, 2010, Bates No. DOJ319160-319161 (Tr. Exh. 7336). In April 2010, the EPA and USACE entered into the April 2010 MOA (Tr. Exh. 7316), pursuant to which the USACE would use an environmental dredge (production Cable Arm closed bucket) for navigational dredging and conduct additional water quality monitoring activities paid for by the EPA while the USACE performed its navigational dredging operations.

**DATA DOES NOT PRESENTLY EXIST TO JUSTIFY
THE PROPOSED \$4.5 MILLION AMOUNT FOR THE SETTLING FEDERAL AGENCIES**

38. In order for the USACE to establish that their dredging liability is equal to or is less than \$4.5 million, the USACE would need data to establish at a minimum the following:

- (a) The amount of PCBs resuspended and redistributed due to the USACE dredging over 16 million cubic yards of sediment from the LFR navigation channel;

- (b) The difference in the areal distribution of PCBs at the LFR Site from the USACE dredging as compared to if there had been no dredging;
- (c) The areal distribution of PCBs as a result of the USACE's open-water disposal of over three hundred and fifty thousand (350,000) cubic yards of dredged sediment from the DePere to Green Bay reach of the LFR. Tr. Exh. 547, Table 1 at 25 (EPAAR154930);
- (d) The natural resources damages at the LFR Site as a result of the USACE's open-water disposal of over three hundred and fifty thousand (350,000) cubic yards of dredged sediment from the DePere to Green Bay reach of the LFR;
- (e) The areal distribution of PCBs as a result of the USACE's open-water disposal of an estimated 4.2 million cubic yards of dredged sediment from Green Bay to outer channel. Tr. Exh. 547, Table 1 at 27-28 (EPAAR154932-33);
- (f) The natural resources damages at the LFR Site as a result of the USACE's open-water disposal of an estimated 4.2 million cubic yards of dredged sediment from Green Bay to outer channel; and,
- (g) The amount of future costs associated with the confined disposal facilities ("CDFs") to manage environmental liability associated with PCBs, such as long-term monitoring of the CDFs, repair and reconstruction of the CDFs, or decommissioning and relocation of over 12.5 million cubic yards of sediment from the CDFs. Tr. Exh. 547, Table 1 at 27-29 (EPAAR154932-34).

39. Based on information contained in publically available USACE records, documents provided by the United States in response to Menasha's FOIA request, and

documents produced by the Governments in discovery in this matter, including but not limited to the new information discussed above, there is no evidence such data exists.

BASED ON AVAILABLE INFORMATION, THE PROPOSED \$4.5 MILLION AMOUNT FOR THE SETTLING FEDERAL AGENCIES IS NOT REASONABLE, CONSIDERING THE USACE'S DREDGING OPERATIONS ALONE

40. The proposed settlement amount for the Settling Federal Agencies is \$4.5 million. I have been asked to assume that this \$4.5 million figure includes the amount the Governments claim is the Settling Federal Agencies' reasonable share of costs for both the dredging claims, as well as the recycling claims, brought against the United States. I offer no opinion on the Settling Federal Agencies' reasonable share for recycling carbonless copy paper ("CCP") at the LFR Site. However, as discussed below, I do conclude that for the dredging claims alone, the \$4.5 million figure is not reasonable. Since \$4.5 million is not reasonable for dredging claims alone, it certainly cannot be a reasonable share for both the dredging claim and for the claim as a result of the United States recycling CCP.

41. The navigational dredging activities of the USACE have likely impacted the remedial costs at the LFR Site. The United States has acknowledged that the USACE's navigational dredging activities have disturbed, exposed, and mobilized contaminated sediments and in some cases have moved contaminated sediments to locations that can be more difficult to remediate. The United States has acknowledged that the USACE actions have redistributed PCB-contaminated sediments in the LFR and Green Bay. The open water disposal of contaminated sediments likely moved such sediments to areas other than where they would have deposited naturally. It is my opinion that if navigational dredging by the USACE had not taken place, the distribution of sediments in the LFR would be different and likely less extensive. In

short, the USACE's actions have affected and had an impact on the location and concentration of PCBs throughout the LFR.

42. Based on documents I have reviewed and the new information discussed above, the USACE disposed of in excess of ninety-five thousand (95,000) cubic yards of dredged sediments, a significant portion of which likely was contaminated with PCBs, dredged from in and around the Fort Howard Turning Basin and disposed of them in open water in OU4 in the area indicated in materials filed by the United States in connection with its proposed consent decree with Georgia-Pacific. The placement of contaminated sediment in open water in OU4 may have increased the remediation cost due to redistribution of the areal extent of PCBs. Assuming all of the sediment disposed of in open water in OU4 by the USACE requires remediation, and based on a cost of \$200/cubic yard, it could cost \$19 million to remediate these sediments alone. Using the 50% uncertainty factor previously used by the United States on other settlements, the estimate of the cost to remediate the 95,000 cubic yards would be \$28.5 million ($1.5 \times \$19 \text{ million} = \28.5 million).

43. The United States has acknowledged that the USACE's dredging and disposal of contaminated sediments at the LFR Site resuspended and moved PCBs. The United States has admitted that the disposal of dredged material in Green Bay increased the scope of injuries to natural resources at the LFR Site. 2011 U.S. Answer (Dkt. 224) ¶ 70. I understand that the settlement amount used by the Governments for natural resources damages in a consent decree for *de minimis* parties is \$250 million and that the range of natural resource damages was estimated at between \$287 million and \$483 million. There are several factors related to dredging and the open water disposal of contaminated sediments that can contribute to the exacerbation of natural resource damages, including the open water disposal of sediments with

higher concentrations of PCBs than previously existed in a particular area, the volume of contaminated sediments disposed of in a particular area, and whether the disposal of contaminated sediments took place in locations of high biological sensitivity. Some of these factors may have more of an impact at a specific site than others.

44. There is limited information concerning how the USACE's open water disposal in OU5 fully impacted the extent of natural resource damages ("NRDs") in OU5. However, the 2002 Final Feasibility Study estimated total sediments that are contaminated with PCBs in OU5 amounted to 68,200 kilograms ("kg"). RETEC, *Final Feasibility Study Lower Fox River and Green Bay, Wisconsin, Remedial Investigation and Feasibility Study*, December 2002 (Tr. Exh. 1 & 2) at ii. Other documents indicate that the 68,200 kg estimate may be an overestimate and that significantly less kilograms of PCBs, perhaps as little as 8,500 kg, have come to be located in OU5. *Patterns of Mass Sedimentation and of Deposition of Sediment Contaminated by PCBs in Green Bay*, Manchester-Neesvig, Andren, Edington, J. Great Lakes Res. 22(2):444-462 Internal Assoc. Great Lakes Res., 1996 (Tr. Exh. 49) at 460. WDNR's post-Feasibility Study estimate, based on data collected through July 2002, was 14,600 kg. WDNR, White Paper No. 19 – *Estimates of PCB Mass, Sediment Volume, and Surface Sediment Concentrations in Operable Unit 5, Green Bay Using an Alternative Approach*, June 2003 (Tr. Exh. 9950), Table 1 at 4. Regardless of the total volume of PCB-contaminated sediment that is in OU5, I have been asked to assume that approximately 6,647.56 kg of PCBs were deposited by the USACE in OU5 which represents a range of between nearly 10 percent of the total (9.75 percent) or upwards of nearly 78 percent of the total PCBs that have come to be located in OU5. Assuming that the cost to restore the natural resource damages in OU5 as a result of the total PCB-contaminated sediments there is \$250 million, the placement of the 6,647.56 kg of PCBs into OU5 could represent

between 10 – 78 percent of the PCBs responsible for causing the natural resource damages, or potentially between approximately \$25 million to \$195 million of the NRDs. Using the WDNR's own 2003 estimate of 14,600 kg, the USACE's placement of 6,647.56 kg of PCBs into OU5 would represent approximately 46 percent of the PCBs responsible for causing the natural resource damages, potentially approximately \$114 million. The full extent of the impact on natural resource damages by the USACE's placement of 6,647.56 kg of PCBs into OU5 will depend on an analysis of the factors set forth above, which cannot be performed based on the available information. Using the 50% uncertainty factor previously used by the United States on other settlements, the estimate of the extent of natural resource damages caused from the USACE's placement of 6,647.56 kg of PCBs into OU5 is between \$37.5 million ($1.5 \times \25 million = \$37.5 million) and \$292.5 million ($1.5 \times \$195$ million = \$292.5 million).

A CREDIT FOR THE USACE FOR PLACEMENT OF PCB-CONTAINING SEDIMENT IN CDFS IS NOT REASONABLE

45. Based on documents I have reviewed, the USACE, as part of its historical navigational dredging activities, disposed of approximately ten million cubic yards of dredged sediments, including sediments contaminated with PCBs, into CDFs in Green Bay. Testing results from the sediments contained in these CDFs demonstrates that sediments with elevated levels of PCBs are present.

46. In my opinion, it is not reasonable for the United States to claim credit for the placement of PCB-contaminated sediments in CDFs against its reasonable share of liability for PCBs at the LFR Site. The potential long-term costs for monitoring, repair, and potential decommissioning of the CDFs have not been established. As a result, it is quite possible that any credit claimed by the United States for the placement of PCB-contaminated sediment in CDFs may only be a fraction of the liability associated with the CDFs.

SUMMARY AND CONCLUSIONS

47. Based on information contained in publically available USACE records, the USACE dredged approximately fifteen million cubic yards of sediments in Green Bay, with approximately 4.2 million cubic yards being disposed of in open water locations in Green Bay. Tr. Exh. 547, Table 1 at 27-29 (EPAAR154932-34). It is my opinion that some of the sediments dredged in Green Bay were contaminated with PCBs, including some of the sediments that were disposed of in open water locations in Green Bay.

48. It is my opinion that from 1957 to the present, each time the USACE conducted dredging activities at the LFR Site it caused the resuspension and redistribution of sediments in the LFR, some of which were contaminated with PCBs.

49. It is also my opinion that the placement of contaminated sediment in open water in OU4 in the area indicated in the depositions of the former USACE employees and the materials filed by the United States in connection with its proposed consent decree with Georgia-Pacific likely increased the cost, or will increase the cost of remediating those areas due to redistribution of the areal extent of PCBs. Even though volume of contaminated sediment is only one factor that can impact the cost of remediation, assuming that all ninety-five thousand (95,000) cubic yards of contaminated sediments placed in OU4 required or will require remediation, I have estimated it would cost on the order of \$19 million just to remediate these sediments alone. Using the 50% uncertainty factor, the estimate of the cost would be \$28.5 million.

50. It is also my opinion, based on the admissions by the United States and my professional experience, that the placement of contaminated sediment in open water in OU5 increased the extent of natural resources damages. There are several factors related to dredging

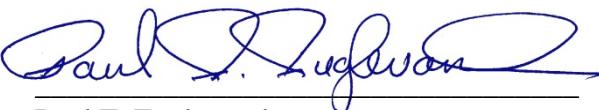
and the open water disposal of contaminated sediments that can contribute to the exacerbation of natural resource damages, including the open water disposal of sediments with higher concentrations of PCBs than previously existed in a particular area, the volume of contaminated sediments disposed of in a particular area, and whether the disposal of contaminated sediments took place in locations of high biological sensitivity. Regardless of the total volume of PCB-contaminated sediment that is in OU5, I have been asked to assume that approximately 6,647.56 kg of PCBs were deposited by the USACE in OU5 which represents a range of between nearly 10 percent of the total (9.75 percent) or upwards of nearly 78 percent of the total PCBs that have come to be located in OU5. Assuming that the cost to restore the natural resource damages in OU5 as a result of the total PCB-contaminated sediments there is \$250 million, the USACE's placement of the 6,647.56 kg of PCBs into OU5 could represent between 10 – 78 percent of the PCBs responsible for causing the natural resource damages, or potentially between approximately \$25 million to \$195 million of the NRDs. Using the WDNR's own 2003 estimate of 14, 565 kg, the USACE's placement of 6,647.56 kg of PCBs into OU5 would represent approximately 46 percent of the PCBs responsible for causing the natural resource damages, potentially approximately \$114 million. Using the 50% uncertainty factor, the cost would be between \$37.5 million and \$292.5 million. The full extent of the increase in the remediation costs as well as the increased extent of the natural resource damage caused by the navigational dredging activities of the USACE and the resuspension and redistribution of PCB-contaminated sediments cannot be fully quantified at this time due to a lack of information. It is my understanding that discovery has not yet been conducted regarding the full extent of the natural resource damage costs for the LFR.

51. It is my opinion that the disposal of contaminated sediments into CDFs has resulted in higher natural resources damages than otherwise would have existed. The full extent of the increase in natural resources damages cannot be determined based on the information presently available. It is my understanding that discovery has not yet been conducted regarding the full extent of the natural resource damage costs for the LFR.

52. It is my opinion that it is not reasonable for the United States to claim credit for the placement of PCB-contaminated sediments in CDFs against its reasonable share of liability for PCBs at the LFR Site, since it is possible that any credit claimed by the Governments for the placement of PCB-contaminated sediment in CDFs may only be a fraction of the liability associated with the CDFs.

53. Based on the above, it is my opinion that the settlement amount of \$4.5 million for the Settling Federal Agencies is too low and does not reasonably approximate the potential relative liability of the Settling Federal Agencies, particularly the USACE, against the potential liability of the remaining defendants.

I declare under the penalty of perjury under the laws of the United States and the State of Wisconsin that the foregoing is true and correct and that this declaration was executed on May 16, 2013, at Kirkland, Washington.

By: 

Paul F. Fuglevand

Attachment 1: Referenced Materials

Newly Referenced Materials:

Study of Alternative Disposal Areas for Green Bay Harbor, WI, U.S. Army Engineer District Chicago, Corps of Engineers, August 1968 (Tr. Exh. 6529)

United States Answer to Counterclaims, September 26, 2011 (Dkt. 224)

Deposition of James Bonetti, June 7, 2012 (Tr. Exh. 6033)

United States Responses to Request for Admissions, June 18, 2012 (Dkt. 512-2)

Deposition of William Gildernick, August 17, 2012 (Tr. Exh. 6169)

Deposition of James Killian, August 20, 2012 (Tr. Exh. 6252)

Deposition of James Bumford, September 5, 2012 (Tr. Exh. 6088)

Deposition of Nicholas Brittnacher, September 6, 2012 (Tr. Exh. 6087)

Fed. R. Civ. P. 30(b)(6) Deposition of Dr. Joseph Gailani, September 6, 2012 (Tr. Exh. 6146)

Fed. R. Civ. P. 30(b)(6) deposition of Jan Miller, September 7, 2012 (Tr. Exh. 6336)

Plaintiffs' Brief in Opposition to Motion to Compel, September 17, 2012 (Dkt. 518)

Joint Supplemental Pretrial Report, November 28, 2012 (Dkt. 698)

Previously Referenced Materials:

Historical maps showing the USACE dredging on Lower Fox and Green Bay (Dkt. 76-15)

Patterns of Mass Sedimentation and of Deposition of Sediment Contaminated by PCBs in Green Bay, Manchester-Neesvig, Andren, Edington, J. Great Lakes Res. 22(2):444-462 Internal Assoc. Great Lakes Res., 1996 (Tr. Exh. 49)

RETEC, *Final Feasibility Study Lower Fox River and Green Bay, Wisconsin, Remedial Investigation and Feasibility Study*, December 2002 (Tr. Exh. 1 & 2)

WDNR, White Paper No. 19 – *Estimates of PCB Mass, Sediment Volume, and Surface Sediment Concentrations in Operable Unit 5, Green Bay Using an Alternative Approach*, June 2003 (Tr. Exh. 9950)

USACE, *Correspondence to U.S. Environmental Protection Agency, Thomas R. Short*, January 29, 2010, Bates No. DOJ319160 – 161 (Tr. Exh. 7336)

EPA, Interagency Agreement Amendment with U.S. Army Corps of Engineers for Response Action Work at the Lower Fox River and Green Bay Superfund Site, Wisconsin, April 2010 (Tr. Exh. 7316)